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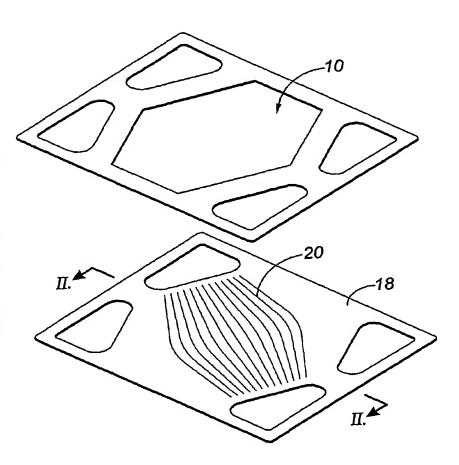
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(54) Title: ELECTRICALLY CONDUCTIVE FUEL CELL CONTACT MATERIAL



(57) Abstract: A multilayer contact approach for use in a planar solid oxide fuel cell stack includes at least 3 layers of an electrically conductive perovskite which has a coefficient of thermal expansion closely matching the fuel cell material. The perovskite material may comprise La_{1-x} E_x Co_{0.6}Ni _{0.4}O₃ where E is a alkaline earth metal and x is greater than or equal to zero. The middle layer is a stress relief layer which may fracture during thermal cycling to relieve stress, but remains conductive and prevents mechanical damage of more critical interfaces.



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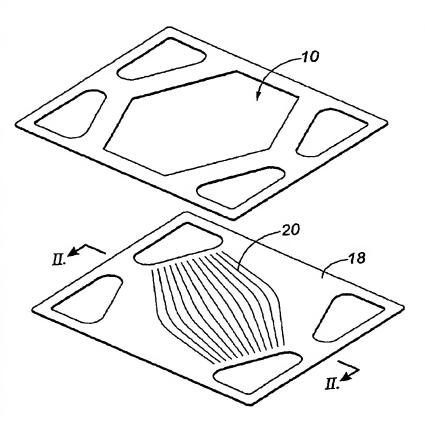
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(57) Abstract: A multilayer contact approach for use in a planar solid oxide fuel cell stack includes at least 3 layers of an electrically conductive perovskite which has a coefficient of thermal expansion closely matching the fuel cell material. The perovskite material may comprise La_{1-x} E_x Co_{0.6}Ni 0.4O3 where E is a alkaline earth metal and x is greater than or equal to zero. The middle layer is a stress relief layer which may fracture during thermal cycling to relieve stress, but remains conductive and prevents mechanical damage of more critical interfaces. A fuel cell stack is also disclosed, which comprises a plurality of planar interleaved fuel cells and interconnects comprising a contact layer disposed between at least one electrode of a fuel cell and an adjacent interconnect, the contact layer comprising a perovskite having the formula ABO<sb>3 where: (a) A is a doped or undoped rare earth metal or lanthanide; (b) B is a doped or undoped transition metal; and (c) wherein the perovskite is a electrically conductive and has a coefficient of thermal expansion which closely matches that of the fuel cell.

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